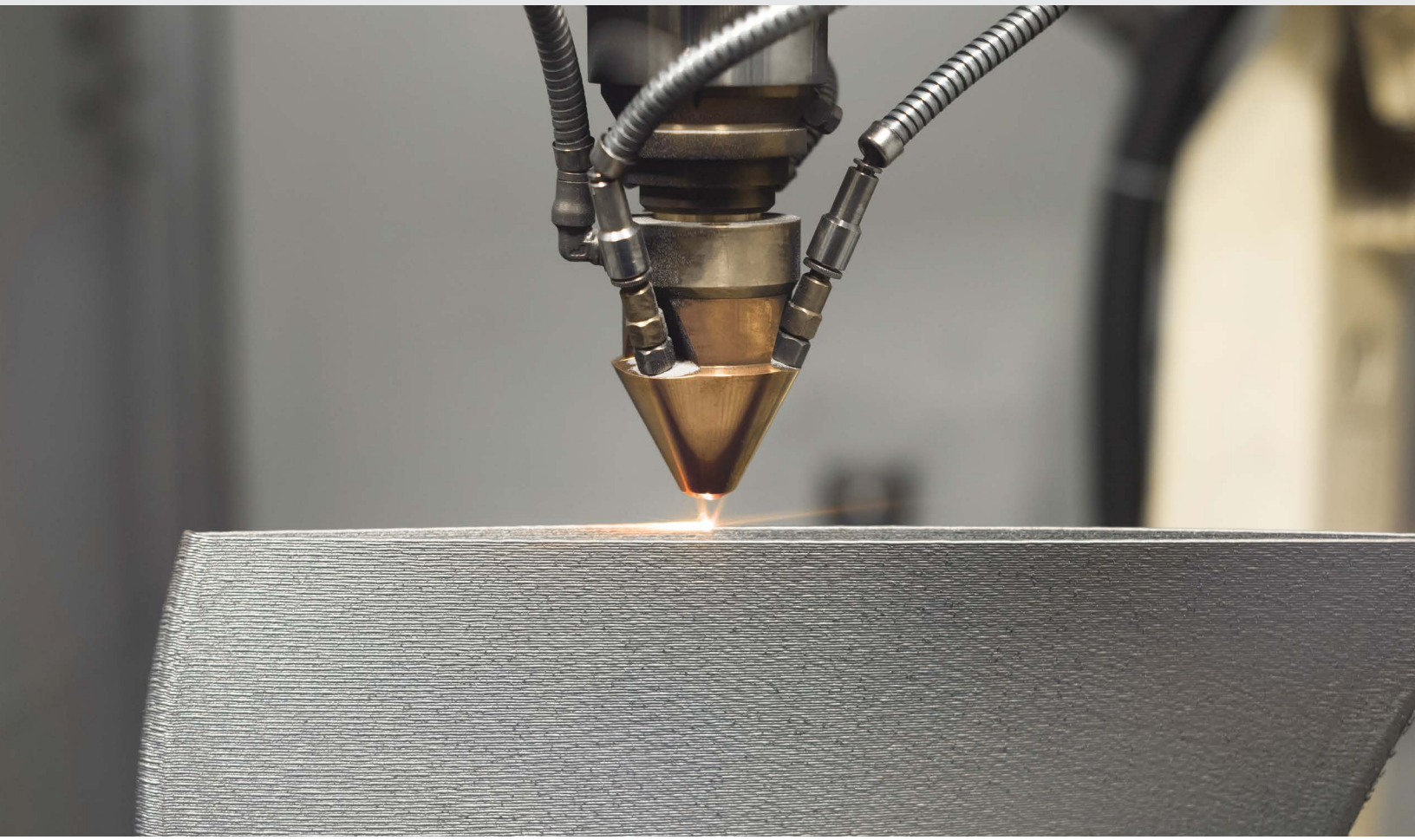
Robotmaster®
OFFLINE PROGRAMMING SOFTWARE FOR ROBOTS

Hypertherm Associates
Software Group

Additive manufacturing

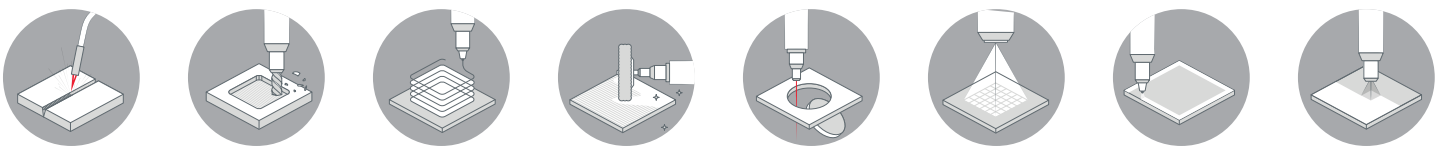


Easy, error-free offline robot programming

Generate error-free robot programs with powerful and easy-to-use offline programming software.

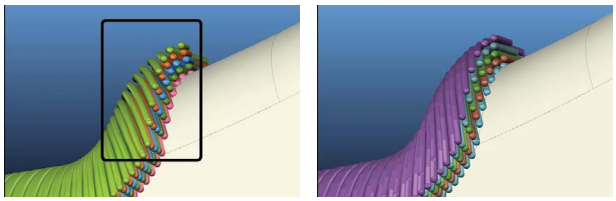
Reduce programming time and eliminate robot downtime on production runs of all sizes.

Enable your process experts to unlock your robot's full potential without the need for robotics expertise.



Industry challenges

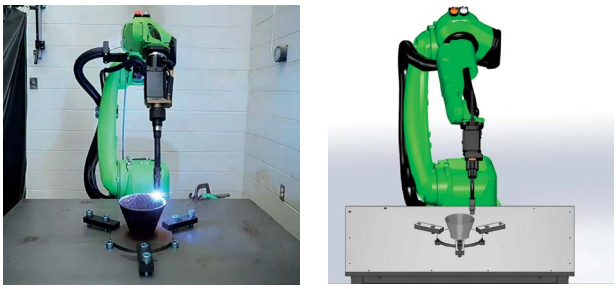
- Programming complex parts via teach pendant is time consuming, tedious, and often impossible depending on the complexity
- There are many viable tools for creating planar slices, however creating 3D mesh slices for non-planar surfaces is more challenging
- Additive manufacturing is generally used in low volume settings or production runs of one which results in a programming bottleneck when done via teach pendant
- Materials used in additive manufacturing are expensive so mistakes in material deposition incur a significant cost



Powerful additive toolpath creation capabilities allow users to achieve deposition consistency across the entirety of the toolpath as the geometry varies.

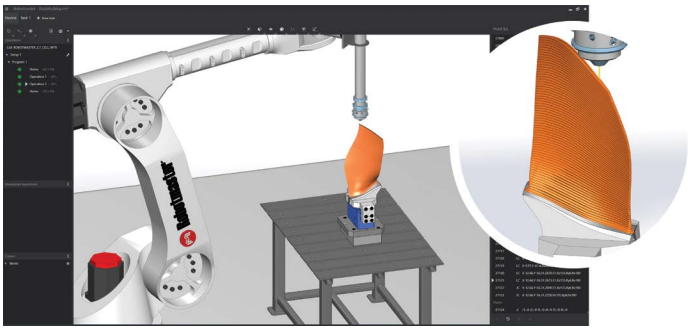
Additive applications programmed with Robotmaster

- Prototyping
- Mold and die repair
- Laser cladding
- 3D printing
- Hybrid manufacturing
- Rapid manufacturing
- Wire arc additive manufacturing/directed energy deposition-arc



Key advantages of offline programming with Robotmaster

- Rapid prototyping ideal for high-mix, low-volume production
- Generate slices and robot trajectories directly from a CAD model using one software solution
- Program optimization via automatic tool orientation control for minimizing wrist rotation and maximizing robot reach
- Full control over process-specific parameters such as stepovers, multi-layer offsets, and deposition rate by layer
- Perform workspace analysis to easily identify potential reach issues and optimize cell setup
- Leverage automatic toolpath optimization capabilities to avoid robotic errors and collisions
- Reduce the amount of post-processing and scraps and achieve consistent, accurate, and repeatable results
- Reduce cycle time of complex parts and small batch runs
- Maximize profitability and increase the robots return on investment
- Create surfacing toolpaths with exact stepovers with the possibility of creating true offsets
- Create 3D planar and non-planar mesh slices essential for depositing material on curved surfaces such as turbine blades, concave objects and more
- Use custom guide curves/meshes to define the direction of the toolpath
- Easily import 3D printing Gcode from popular softwares such as Slic3r and Cura to generate robot trajectories. Robotmaster supports the RepRap flavor import, which allows the user to import 3D printing dedicated paths with their process related information



No matter how simple or complex, from a straightforward 3D printing cell to Laser Metal Fusion (LMF) and Laser Metal Deposition (LMD) applications, error-free task-based programming is just a click away.

For more information, visit: www.robotmaster.com

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